Virginia WILDLIFE

SEPTEMBER, 1954

VOLUME XV *Price 15 cents* NUMBER 9

Photo by Shomon

September Reward

Each fall and spring the channel bass run off the coastal islands of Virginia's Eastern Shore sends the blood pressure upward for surf fishermen. Now and then patience is rewarded by a momentous struggle and a proud fish. Here Heath Clarke of Richmond beams excitement as he beaches his 33-pound channel bass on Cobb Island.

Virginia WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia

A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

COMMONWEALTH OF VIRGINIA

THOMAS B. STANLEY, Governor

Commission of Game and Inland Fisheries

COMMISSIONERS

Beverley W. Stras, Jr., *Chairman*, Tazewell

I. T. Walke, Jr. . Norfolk
Frank P. Burton . . Stuart
Wm. C. Gloth, Jr. . Redart
T. G. Herring . . . Dayton
Dr. E. C. Nettles . Wakefield
Holman Willis, Jr. Roanoke
Dr. W. B. Rains . . Warsaw
T. D. Watkins . Midlothian
Homer G. Bauserman . . . . . Arlington

I. T. QUINN

Executive Director

EVELYN P. RUEGER

Assistant Executive Director

DIVISION CHIEFS

Chester F. Phelps . . . . . *Game*
G. W. Buller . . . . . *Fish*
Lillian B. Layne . . . . . *Fiscal*
J. J. Shomon . . . . . *Education*
Webb Midyette . . . . . *Law Enforcement*

Volume XV SEPTEMBER, 1954 No. 9

In This Issue

Cover

Commission photo by Kesteloo

The red fox continues to be an important game animal in Virginia. This young pup became friendly with the photographer and pleaded for his picture to be taken.

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

Editor: J. J. Shomon

L. G. Kesteloo, *Photography*

Florence Blankenship, *Circulation*

SUBSCRIPTIONS: One Year, $1.00; two years, $1.50; three years, $2.00. Remittances by check or money order to be made payable to the Treasurer of Virginia. Local game wardens will accept subscriptions or they may be forwarded direct to Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia.

Virginia Wildlife is published monthly at Richmond 13, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to the Commission, P.O. Box 1642, Richmond, Virginia. The editorial office gratefully receives for publication all news items, articles, photographs, sketches, and other materials which deal with the wise use and management and study of Virginia's inter-related. renewable resources: soils, water, forests and wildlife. Since wildlife is a beneficiary of the work done by state and federal land-use agencies in Virginia, editorial policy provides for full recognition of their accomplishments and solicitations of their contributions. Credit is given on material published. Permission to reprint is granted provided proper credit is given the Virginia Commission of Game and Inland Fisheries and Virginia Wildlife and proper clearances are made with authors, photographers, artists and publishers.

Entered as second class matter, November 10, 1947, at the post office in Richmond, Virginia, under the act of August 24, 1912

The Eternal Web

HAVE you ever stopped in the shade of a hemlock-scented forest nook and watched the water skaters glide over a gurgling trout brook? How definitely they move. Have you ever marvelled at the sand fleas on an ocean beach scurrying into their round holes the moment you approach, or, watched a box turtle lay its white eggs, one on top of the other, in the sand? Have you ever thought about the responses of animals—and plants—and what makes them behave the way they do? Order, preciseness, set patterns, the interrelationship of one body part to another, of one body to another or to the environment around it are things which make life what it is, make it worthwhile. The study of how animals and plants behave and how they affect one another is a fascinating science—ecology—and we should know more about it.

Two months back, in the July issue, we discussed the business of order and balance in nature. We said, and we'd like to repeat if we may, that we must learn more about the relationship of air, sunshine, plants, animals, minerals, water, and man. This is important if we are to better understand ourselves and life around us. To be better conservationists we must understand nature, our environment, and the natural order of things.

So it is with ecology. The more we understand the eternal web of life—and we shall never fully comprehend it for that would be knowing the mystery of life itself—the more we will realize how utterly foolish our existence is if we try to work against nature.

Take for example, wildlife or fishlife. If we work against nature, we are just pouring money and energies into a rat hole. Experience now shows that restocking of game does not pay. When man rears wild game and partially domesticates it and then tries to make it wild again, only disillusionment follows. Restocking has a place in management of course but not the place we once thought it had.

We once thought we could fill our lakes and streams with cans of fish fry and *pronto* our fish problems would be solved. But such was not the case. There must be suitable living conditions in the beginning if restocking is to do any good. Also the correct remedial prescription must be made.

We all know that a certain amount of antiseptic is good for a wound—but too much is too much. It is wasted. Pouring millions of hand-reared quail into areas where nature cannot support even the wild variety is useless. Same for fish fry into a stream or pond. If conditions are right in the first place, nature will do her own replenishing, man permitting. All that may be needed is a small brood stock or just enough to restore balance.

Why has our outlook toward restocking changed? There are many reasons. Ecology is one. Research and experience have taught us that life is complex. We've found that life is infinitely involved and complicated and mysterious. The more we learn about plant and animal relationships, the more we know what we *don't* know.

Today, in some ways, man has become an intellectual giant. His technology is so advanced it becomes frightening. His power over nature has become so vast as to threaten civilization itself. In one way he has advanced beyond all fondest dreams. In another he is still in the doldrums of ignorance and despair.

The one main idea your editor would like to leave with you, the reader, is this: man has reached a point in his intellectual achievement where he can, by his own brain power, do much to control nature, but he can never overrule it. He can destroy and he can build. He can be wanton in his destructiveness and he can be creative. He can wreck his environment—and himself—or build a greater future. The choice is his. As Alan Paton says in his book: *Cry the Beloved Country:*

"The grass is rich and matted, you cannot see the soil. It holds the rain and the mist, and they seep into the ground, feeding the streams in every kloof. It is well tended, and not too many cattle feed upon it; not too many fires burn it, laying bare the soil. Stand unshod upon it, for the ground is holy, being even as it came from the Creator. Keep it, guard it, care for it, for it keeps men, guards men, cares for men. Destroy it and man is destroyed."

Knowing more about the web of life will not necessarily mean we will save civilization from oblivion. No, not necessarily. But better understanding the complexities of our environment will do much to put us on the right path toward lasting survival.—J. J. S.

Young squirrels at hickory-nut time! For nearly 300 years shooting a mess of tender young squirrels has been an American tradition. Properly managed, squirrels will forever remain a part of our rural scene.

Bushytails—Beyond the Law

By LEE YEAGER[1]

(Photos by the author)

UMPTEEN years ago, in a deep southern state, I used to take a short-cut across an oak-hickory ridge to school. That was about two years after I began hunting solo.

Late in November of that year I saw a fox squirrel flash into a hole high up in a white oak near the ridge path. I stopped to size it up. The next day was Saturday.

A bit after sunup I cat-footed into "long-tom" range of the oak and squatted at the foot of an ancient gum. Fifteen minutes later rusty stuck his head out of the hole and "cased the joint." I looked too much like a stump

Illinois Natural History Survey photo

Both mamma squirrels, but young and "old", left to right. The "old" squirrel is about two and one-half times more productive than the young female in her first mating year. Old females, like the one on the right, almost invariably live in prominent den trees, especially during the fall, winter and spring.

in autumn leaves to be alarming, so the squirrel slipped out of the den. I swung the old cannon squirrel-ward and cut loose with Nitro Club and fives.

You remember black powder? You had to plow through the smoke cloud to see if you had scored. . . .

Well, I had. Lying at the foot of the white oak, he looked big—surely a wise old buck—just what I wanted to tote home! I picked him up. It was then that I got the let-down—"he" was as fine a mamma squirrel as you'd ever want to see.

An hour or so later I got another let-down. This time I cut in ahead of four or five squirrels playing "follow the leader." They would scram up a red oak, through tree tops, down a sweet gum, and then scamper merrily on through dry autumn leaves. You could hear them two hundred yards away. Finally the leader came into range and I blasted him off a fallen maple. "He" was big, too—a big mamma gray. We called them "cat" squirrels down in Mississippi.

I didn't know it then, but in one Saturday morning I shot a good part of my next year's hunting. Years later I found out why.

It was all according to the book, too. I found out that "old" squirrels, that is, those that have mated once, are the main producers—usually to the tune of *two* litters per year. "Young" females usually produce only *one* litter their first mating year. There are exceptions, but this is the general rule. Moreover, the "old" gals turn out bigger families, and, from experience, are sharper with foxes, raccoons, and great-horned owls. One old breeder, on the average, is worth about two and one-half youngsters mating for the first time. On this basis, and allowing three young per litter, I shot a total of *fourteen* squirrels that Saturday morning instead of *two*. And, along with a lot of others, I paid for it, for squirrels in my section of the hills just couldn't stand the kind of shooting they got a few years after the first World War.

Now, let me back up a bit. I hear somebody asking, "How, Brother, can you tell a mamma squirrel sixty feet up in a hickory tree?"

It's a good question. You can't! In hickory-nut time, in the white oaks, in the cornfield—any time squirrels are feeding instead of pitching woo, you can't tell, within .22 range, a grandpappy from a sciurid queen. Then, you have to shoot first-come, first-served, for he-bushies don't have long-gaudy tail feathers or antlers like white-tail deer. Too bad, for then we could shoot "bucks only"; and there would be more shooting and fewer problems for the game manager.

So we have to do the next best thing. That's learn all about 'em—what they eat, when they breed, what kind of dens they like best in the fall, in winter, and in the spring. For example, if I had just known, that late fall morning long ago, that any squirrel living in a prominent den tree was likely to be a female, I could have begun from there. It's even more likely to be a female during the winter and spring—it's nearer maternity ward and nursery time. If I had just known that Mrs. Rusty, like all provident mothers, was latching onto a good, safe place to set up housekeeping and raise a family! But I didn't know that, so I blasted seven instead of one out of the den tree. A few months later the six young of the year would have given me a fine September day.

A .22, equipped with a scope, makes a fine squirrel gun. But you seldom stop a wounded squirrel with the pill-slinger, so make the first shot good.

Or the mating chase. That's even simpler, the eternal triangle, this time with three extra bucks thrown in. But only one female, the lead squirrel. *Never shoot her!* Shoot instead one of the young bucks bringing up the rear. In a big chase there'll be two or three—young dandies getting in their first licks at woman chasing. Lots better eating than the old sinner laying down the hottest foot after the skirt! Better eating than the skirt, too, if she's an old timer.

It adds up fast. A while back I tried to do a little figuring. During my late 'teens I averaged maybe sixty squirrels per fall and winter. Each year I shot an estimated ten squirrels out of key den trees, and perhaps a half-dozen others making ninnies out of the men folk. It's been a long time ago and I am trying to be conservative. To make sure, let's cut production for "old" females from the national average of about six to four. To make doubly sure, let's say that two of the den-tree squirrels were males, and that three of the chase leaders were youngsters of the year. For them we'll allow only three offspring each. Therefore, eight plus three times four equals 44; and nine more make 53—a fair season's kill, even when squirrel hunting was akin to the "good old days." Other hunters in my locality operated about as I did, and we all went for fried young squirrel. Best dish of the year! No wonder the hunting went a bit sour. . . .

I lived, then, in top squirrel country: small fields, many of them corn and peanut, scattered through lots of woods. In the woods were lots of oaks and hickories;

Squirrels in the corn! A farm problem in heavily wooded country since colonial times. Remember, where woods and cornfields come together there's just got to be squirrels! Usually the farmer will welcome you and your gun.

The culprits! Corn-fattened, there are none better. Virginia offers a lot of cornfield squirrel hunting.

and mulberries and a dozen other fruits were common. I'd say that, except for our hunting practices, squirrels never had it any better in the hills of north Mississippi. But with almost every hunter taking 60 squirrels bodily out of the woods, and another 60 out of production, I wonder, now, how they held up as well as they did. Give most of the credit to the highly favorable habitat.

I've said that it was a long time ago. We didn't have radio or television; and motor vehicles were few indeed as compared to the present average of two per farm. Hunting, fishing, trapping, and B.Y.P.U. on Sunday night, were the attractions. So naturally we hunted a lot . . . I don't know what we would have done otherwise. But I remember that we let some foolish ideas rob us of a lot of fun. . . .

Take 1923, the year I shot 75 squirrels, September 1 to Christmas Day. It's probably the biggest kill I ever made in one fall. I'd settle for a lot less now, and I know fellows who'd cash their season's ticket for a half-dozen well-fattened grays. But in 1923 I fretted a good deal about 75 squirrels—Kirk Barlow shot 79!

In those days, 30 years ago, I thought there were lots of hunters. Now, there are three times as many, maybe more, and the end is not in sight. That means several things. . . .

For one, season bags of five dozen squirrels are over, except in the few localities where extensive oak-hickory woods are well mixed with cornfields, and where hunting has not yet reached ultra-modern pressures. The ever-widening margin on squirrels is being reflected in the laws of nearly every state: short seasons and limited daily kills. Even season limits on squirrels are beginning to show up. Today, a couple of sleek grays are worth as much as a sackful when I was a pup.

I've done a little thinking about this increased value

(Continued on page 12)

Rail Birds of Virginia

September is rail shooting time in the Old Dominion. How well do you know your Virginia rail birds?

PICTURE if you will a large marsh bird family with 180 separate species and about 50 genera and you have some idea of the size of the rail family, scientifically known as the *Rallidae*. In this big family of chicken-like birds we find three distinct classes of marsh birds, the rails, gallinules and coots. Nearly all of these birds are commonly referred to as "mud hens" although countless other types of names are less frequently heaped upon the tribe.

The distribution of the rail family is virtually cosmopolitan with about 15 species occurring in North America. In Virginia four rails are listed in the check list of birds occurring most commonly in the Commonwealth. The coot is very common in the state and is particularly prevalent in the tidal estuaries. Space, however, does not permit its special treatment here. As for the gallinule, this related bird belongs to that tribe of mud hens most commonly found in the Gulf States. So for purposes of brevity and space we will consider only the five more common Virginia rails—sora, clapper rail, king rail, yellow rail, and black rail.

Rails are secretive, shy marsh birds, with long, well-developed legs, and short rounded wings. Their presence is revealed by their calls, and they are seldom seen except when flushed from the marsh. They will run and hide rather than take wing. When forced to fly, their flight is short, with legs dangling, and they quickly drop back into the protective marsh. The flesh of these birds is delicious, and they are eagerly sought during the hunting season by Virginia sportsmen.

Clapper Rail

Rallus longirostris crepitans (Gmelin)

The clapper rail, commonly known to hunters as "the salt water marsh hen," is a plump, somewhat chicken-like marsh bird of secretive habits. It is shy and wary, and much more often heard than seen. When flushed, it rises from the reeds close at hand, flies feebly for a short distance with legs dangling, and drops back again into the marsh.

The clapper is found most abundantly in Virginia's two Eastern Shore counties, Northampton and Accomack. A few are also found on the brackish marshes on the western shore of Chesapeake Bay.

This bird of the coastal marshes is sometimes confused with its larger cousin, the king rail, but generally the king rail is found in the fresh water marshes. As a rule, the hen-like appearance, grayish coloration, strong legs, long bill, and white patch under the short tail will identify the clapper.

The clapper rail is a rather large bird, weighing from 12 to 15 ounces, and is surprisingly secretive for its size. Its home is among the grasses and reeds of the salt marshes, where it is seldom seen except at high tides. At this time, it will take wing at the approach of a boat, fly a short distance, and then drop back into the marsh. Its long toes, legs, and slender body permit it to dart among the reeds and hide with ease.

Until recent years the state of Virginia claimed him as a native, local bird—which in reality he is—and made regulations accordingly. A few years ago, the U. S. Fish and Wildlife Service took over his custody on the grounds that some of them passed back and forth over the Mexican border and were, therefore, migratory.

Breeding from Connecticut south to North Carolina, only small numbers of these rails stay out the winter

The clapper's long toes, legs, and slender body permit it to dart among the reeds and hide with ease.
National Audubon Society photo by Cruickshank

The black rail, an elusive bird, is seldom photographed. It nests in marshes and fields of grass or grain.
Hugo Schroder photo

A typical fresh water marsh inhabited by sora rail. Birds are small but excellent eating.

A typical salt marsh inhabited by the larger, more noisy clapper rail.

here in Virginia. Most of them winter farther to the south and return to Virginia about the first of April. The nests are composed of grasses found in the marsh, and the clutch consists of from 8 to 12 brownish white eggs, speckled with brown. The young are glossy black, which soon gives way to the olive gray of the older birds.

The high storm tides of the spring and summer, which destroy their nests and drown the young before they are able to care for themselves, are the most serious natural enemy of these birds. Were it not for the re-nesting habit of the clapper and its high reproductive rate, its numbers would be dangerously reduced during these floods.

Although not a strong flyer, nor an elusive target, the clapper is a bird which even the most amateurish gun handler likes to hunt, for even if you can't hit a quail you can hit a clapper. That is, of course, providing you can find him. This bird is heavily gunned for during the open season, but fortunately can be forced from its cover only during extremely high tides, and these do not occur very often during the open season.

The Sora

Porzana carolina (Linnaeus)

Unlike the other rails found in Virginia, the sora does not nest with us and is only seen during the spring and fall migrations. It is a small grayish brown bird, with a black patch on his face and throat, and possesses a short yellow bill. It breeds from Maryland north in the fresh water marshes and winters from Florida south.

During the migration and the brief time spent with us these rails may be flushed in our brackish marshes, but they prefer the wild rice (wild oats) area of our fresh water marshes. They are especially esteemed for their fine flavor, and as in the case of the other rails are easy targets and not much sport. The sora arrives here during mid-September and stays until cold weather. The first freeze sends them on south. They may be seen swimming from one piece of cover to another on storm tides and are expert divers. In the spring they return north and pass through Virginia during April.

Their presence in our marshes is revealed by a sharp "*keek*" uttered when disturbed by the crack of an oar on the surface of the water. They can only be easily flushed from protecting marshes at extreme high tides. Hundreds are killed yearly by our nimrods. Were it not for its high reproductive rate and certain inaccessible refuge areas, it would have a difficult time surviving. It is one of our most sought after migrants, but seems to be able to maintain its numbers from year to year.

King Rail

Rallus elegans elegans (Audubon)

The king rail closely resembles the clapper, but is slightly larger and is reddish brown instead of olive gray. Its favorite habitat includes our brackish and fresh water areas, but the range of the clapper and the king sometimes overlaps in the marshes at the extreme tip of our Bay counties. This bird is occasionally bagged by sora hunters who call him the "king sora."

The king rail nests in the marshes of our tidewater country, where his deep throaty call may be heard throughout the summer. His nest resembles the clapper's, possessing a similar number of eggs which are more heavily spotted with brown than the preceding species.

Yellow Rail

Coturnicops noveboracensis (Gmelin)

The yellow rail, not too common in Virginia, is very small and unusually secretive in its habits.

This rail prefers the higher marginal areas of marshes, and grassy meadows, and on occasions is found in grainfields and among garden crops. It is more reluctant to take flight than our other rails, and if wounded, swims and dives to avoid being taken.

Black Rail

Creciscus jamaicensis stoddardi (Coale)

The black rail, also a small secretive bird, nests in marshes and fields of grass or grain. It seldom emerges from cover and is extremely hard to locate. It is reluctant to fly and is occasionally found squatting close to the ground, with its head under cover.

The eradication of undesirable growth is the first step in marsh management.

Small Marsh Management for Waterfowl

By JOHN E. BRYANT
Hog Island Refuge Manager

AT ONE time in this country the supply of waterfowl appeared inexhaustible, but in the past several decades, with the ever increasing number of gunners and continued reclamation of wet lands for agricultural use, this supply has been shown to be exhaustible unless adequate steps are taken for its protection. There are countless small marsh areas throughout the country which at the present time are lying idle when they should, and would, add greatly to the overall feeding, protection, and production of waterfowl. These small marshes, aside from improving the waterfowl situation, will add esthetic as well as monetary value to the landowner.

POTENTIALS

The preliminary step in the development of any given marsh is to determine the potentials of that marsh, for if no potential exists, the time and effort spent will be of little worth. In determining this potential, the following factors must be considered:

1. The physical characteristics of the marsh. This includes the source and control of the water supply, the acidity or alkalinity of the water, and the turbidity of the water.

2. The species of waterfowl food plants that will thrive in that specific type of habitat or are already there; and also the species of undesirable plants that are present.

3. The species of waterfowl that will be attracted to the area, such as diving ducks or puddling ducks.

4. The type of waterfowl habitat that will be available to the birds, such as loafing, nesting, feeding or resting.

This preliminary analysis may be conducted with the services of a trained waterfowl biologist available from the State Game Commission at no cost to the landowner. Upon completion of this analysis of the potentials of the small marsh, development work follows.

DEVELOPMENT

The importance of adequate water control for the development and management of any given waterfowl area cannot be stressed too often or too much. The attractiveness and usefulness of any area depends upon the vegetation present in and near the water which in turn depends on proper control of the water.

Construction of small earthen dikes in strategic locations may be necessary, as may the installation of simple control structures. It must be pointed out that these developments need not be elaborate or expensive, for often it is the simplest structures that work the best. If the marsh is grown over with too much brush, clearing may be necessary. The use of mechanical or chemical means to eradicate undesirable marsh plants and aquatic plants will also be of importance, for many of the most favorable waterfowl food plants are not the climax vegetation in the marsh.

MANAGEMENT

Once the development work has been completed, man-

agement of the area for attracting and holding waterfowl begins in earnest.

There are two general methods of managing the environment of a small marsh: (1) permanent level management, and (2) draw down management. Each method results in a different type of environment and thusly a different type of food supply.

1. Permanent level management of small marshes is preferred under ordinary conditions. In this form of management, the water is kept at a constant level throughout the year, and both aquatic and marsh plants are introduced. This type of management has the advantage of less work than the draw-down basis, and it can also provide an excellent fishing and trapping area for the landowner. A good population of muskrats can be maintained for the resulting revenue. Muskrats and waterfowl can exist very well together although they utilize the same food in some instances. Care should be taken to prevent overpopulation of muskrats to prevent damage to dikes.

The disadvantage of this type of management is the encroachment of undesirable plant species over a period of time. Choking out of the area will also occur when the plants become too numerous.

2. For the draw down type of management the area is flooded for eight months or so beginning in September and ending in late spring. The area is then drained, dried up, and planted to an annual plant species, such as millet, which provides a heavy yield of seed. As the plant matures and the seed ripens, the area is gradually flooded to make the seed available to the waterfowl. This method has the advantage of making a large supply of food available rapidly, and it is very useful where the water is too turbid for aquatic growth. It is also useful where the bottom is too mucky or too hard for aquatic growth.

An adequate supply of water must be available at the proper time in the fall for flooding of the area.

The bulk of waterfowl food consists of seeds, leaves, stems, rhizomes, tubers, and rootstocks of plants growing in and near water; and the seeds, stems, and leaves of cultivated grains and grasses.

Waterfowl food plants have a definite range within which they can flourish. The type of plant species to be planted in any given area must be determined with accuracy, as the growth depends mainly on the character of the water, quality of the soil and climatic conditions. As the waters in the southeast are slightly basic to acid, and the growing season is long with relatively open winters, certain plants will thrive in this area that will not exist elsewhere. A partial list of waterfowl food plants for the southeast region is as follows:

Aquatic Plants (Those growing under and on the surface of the water)

Fresh Water	*Brackish Water*
Sago Pondweed	Sago Pondweed
Wild Celery	Wild Celery
Banana Waterlily	Widgeon Grass
Duckweeds	Eel Grass
Redhead Grass	Muskgrass
Clasping Pondweed	Horned Pondweed
Pondweeds (*Potamogeton* sp.)	

Marsh Plants (Plants emergent from water or wet soils)

Fresh Water	*Brackish Water*
Wild Rice	Wild Millet
Broad-Leaved Arrowhead	Three-square Bulrush
Chufa	Salt-marsh Bulrush
Wild Millet	Southern Bulrush
Three-square Bulrush	Smartweeds (numerous)
Soft-stemmed Bulrush	
Southern Bulrush	
Smartweeds (numerous)	

It may be desirable to rid the marsh of pest plants (by means other than mechanical or chemical) before intro-

Construction of small dikes in strategic locations may be necessary, as may the installation of simple control structures.

John Bryant, refuge manager at Hog Island, examines common bulrush (Scirpus robustus), an important duck and muskrat food.

There are many marshes which are idle at the present time, but which could add greatly to the protection and feeding of waterfowl. This is the improved waterfowl refuge at Assateague Island.

In determining a marsh's potential, the species of waterfowl which will be attracted to the area must be considered, as well as the type of habitat which will be available.

duction of food plants. This can be accomplished by manipulation of the water level to flood out the plants. Most emergent marsh plants will not survive more than a season or so if flooded with an additional one to three feet of water.

The control of predators is of value in some areas. Snapping turtles, large bass, foxes, raccoons, feral house cats and numerous other predators annually take their toll of eggs and ducklings. Trapping of these animals will rid the danger to waterfowl and in most cases provide some revenue from the sale of the meat or hide.

The overall development and management of these small marshes does not take a considerable outlay of money or time. The thousands of small marsh areas that can be managed may not add much to the overall picture of waterfowl production individually, but as an aggregate contribution it plays a large part. Of the total number of small marshes suitable for improvement in Virginia, only a very few are now being utilized. Individuals, organized sportsmen, and other groups could do much if the desire and initiative were there.

BUSHYTAILS (Continued from page 7)

of game. "Sportin' " value, not money, for really we are beginning to *enjoy* each squirrel more. Everyone knows that things become more valuable with scarcity; bushytails are almost a luxury now where, in grandpappy's time, they ". . . durned nigh et the cornfield up!" You don't have to go back to grampa's day in some localities.

I've thought some, too, about how to get this extra fun per squirrel. Maybe you can divide the fun angle about three ways: knowledge, self-discipline, and skill. Squirrel hunters *today* can use all three. . . .

Let's take *skill* first. It goes back to Colonial days. Everything considered, I doubt that we'll beat some of the old-timers. But we hunt with different guns, now, and under vastly different conditions. Personally, I like the .22, even though I've killed more squirrels with shotguns of a half-dozen brands. This was in the South, where you seldom had a shot until the squirrel started streaking through the treetops. You had to use the snap-shooting form of the quail hunter to get him. It was snappy sport.

Now, I like best to be in the woods with the .22. And I like a scope. This combination sets the stage for the gun-shy boys, and offers an opportunity to work them in open woodlots and pastures. I'd rather topple one wise old granddad than three or four early-season squirrels feeding in hickory trees.

There's one thing I always aim for with the .22—that's to make the *first* shot good. You don't stop many wounded squirrels with the pill-slinger. Making *sure* of this first shot is the real test of skill. Work into reasonably good range, even if it takes a long time. I make no apologies for using a rest. A head-shot rusty is good conservation; a flank-shot one is often waste. Besides, it's a tough way for a squirrel to spend his last hour—or day!

I'm not one to write much, or well, about self-discipline. But it pays off in the squirrel woods, or in any other hunting. There seems to be two kinds of self-control, although they are pretty much related. One is concerned with *skill*; the other, knowledge. We've already talked about making *sure* instead of blasting away; clean kills instead of a high crippling loss. The most skillful sportsman is the one who leaves the smallest number of wounded ducks, squirrels, and deer in the field.

We've talked about knowledge, too, back at the beginning of this piece. I'm just beginning to realize how closely akin knowledge is to self-discipline. For, really,

(Continued on page 24)

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

SPECIAL BOW HUNTING SEASON ON DEER AT HOG ISLAND STATE WATERFOWL REFUGE. Hunting for deer of either sex, bag limit one a day, two a season, by bow and arrow only will be permitted during the weeks of October 4-October 9; October 18-October 23; November 1-November 6, all dates inclusive, from one-half hour before sunrise to one-half hour after sunset. A valid hunting license plus a big game stamp (except for county residents) is required. Hunting will be by special permit only. A camping site and parking area will be provided. Application blanks and complete details on regulations and facilities may be obtained from the Commission offices in Richmond and applications will be received until September 10, 1954.

NEW GAME WARDEN APPOINTMENTS ANNOUNCED BY COMMISSION. Executive Director I. T. Quinn announces the appointment of Ben L. Bird as supervising game warden of the Daniel Boone District to succeed the late M. Wheeler Kesterson. Bird had been game warden of Bland County for 22 years. The new Bland County game warden is Wayne Richardson. In Essex County Ritson Hutcheson has been appointed game warden to replace W. E. Ware who is now supervising warden of the George Washington District.

SUSSEX GAME REFUGE TO BE SOLD BY COMMISSION. Under authority granted by the 1954 General Assembly, the Commission is making preparations to sell the Sussex County Game Refuge comprising approximately 2000 acres about 10 miles west of Waverly in that county. In modern game management practices the area proved too small and too narrow to develop effectively as a refuge. However, the Commission will retain ownership of the public fishing pond it developed which has approximately 50 surface acres of water.

COMMISSION'S NEXT TV PROGRAM ANNOUNCED. The Game Commission's monthly TV program, featuring panel discussions, interviews, demonstrations and newscasts, will be telecast next over WTVR, Richmond, at 5:50 P.M. on Monday, September 6th. The program is under the direction of J. J. Shomon, chief of the Education Division and editor of Virginia Wildlife.

RAIL AND DOVE SEASON SET FOR 1954. The U. S. Fish and Wildlife Service has notified Executive Director I. T. Quinn that the season for rails will be September 11-November 19 and that there will be a split season for doves, September 11-September 30 and October 16-November 4. Daily bag for sora will be 25 and the possession limit, 25. For other rails, the bag limit will be 15 a day and 30 in possession after the first day. Hunting hours are from one-half hour before sunrise to sunset. The daily bag limit for doves is eight (8) and hunting hours are from noon to sunset.

GAME-FISH CONVICTIONS TOP LAST YEAR. The Commission has released figures on convictions for the fiscal year ending June 30, 1954 which shows a total of 9,526, an increase of 1,305 over last year. Convictions for game violations numbered 2,308 which was 65 more than last year; for fish violations, 2,772, an increase of 797. Convictions for dog violations totalled 4,446 which was 455 more than last year, but the number of dogs killed, 42,243, represented a decrease of 988.

ESSAY CONTEST PLANS SLATED FOR ENLARGEMENT. Final announcement on the eighth annual Wildlife Essay Contest has been delayed pending decision on details of the plan to enlarge the scope of the contest. Watch for complete announcement and regulations in the forthcoming issue of Virginia Wildlife.

WINBORNE MILL POND, 50 acres, Southampton County, approximately 2½ miles from Sunbeam, Virginia; boats available, stocked with largemouth bass.

SUSSEX GAME REFUGE POND, 4
Virginia; no boats availabl

LAKE CONNER, 111 acres, Halifax County, near Clover, Virginia; boats available, stocked with largemouth bass and bream.

Commission Owned or C

Virginia fishermen who long to get away
nearly every section of the Commonweal
ually get new waters as the Commission

Here are the Commission's
owned or controlled, pu

Commission ha

AIRFIELD MILL POND, 200 acres, Sussex County, near Wakefield, Virginia; boats available, stocked with largemouth bass.

UPPER POWHATAN LAKE, Powhatan County, about three miles from Powhatan on Route 60; boats available.

...s, Sussex County, near Disputanta,
...ked with largemouth bass.

LAKE BURTON, 76 acres, Pittsylvania County, near Gretna, Virginia; boats available, stocked with largemouth bass and bream.

...trolled Lakes and Ponds

...rm it all can find public fishing waters in
... Areas in need of public ponds will grad-
...ublic pond construction program expands.

...st purchased or constructed,
...fishing lakes and ponds.

...d by Kesteloo

BAXTER'S POND, 42 acres, Prince George County, near Disputanta; no boats available, stocked with largemouth bass.

LOWER POWHATAN LAKE. These two new Commission lakes cover about 152 acres altogether and have not yet been stocked.

LAKE GORDON, 157 acres, Mecklenburg County, near South Hill, Virginia; boats available, stocked with largemouth bass, bream and crappie.

Proven projects for sportsmen's clubs are many.

Suggestions for Sportsman's Clubs—

SPORTSMAN'S clubs, be they hunting or fishing organizations or conservation groups, can do considerable good in the general conservation movement of any state and for the country. A few persons believe that sporting organizations are not constructive in their efforts, that they are more agitation and troublesome than good. Instances have been cited where some organizations are completely antagonistic in their thinking and obstructive in tactics. Surely there are good organizations, and bad. Some exist only for a social get together and maybe a little "hell-raising." Others go beyond this, and try to do good work, try to justify their existence. But sportsman's clubs can be made worthy organizations.

The Commission of Game and Inland Fisheries believes that, for the most part, sportsman's clubs have been a good influence and that the majority are good in interest and sincere in purpose. A number have performed outstanding service to the field of resource conservation and many have more than justified their existence.

In an effort to help clubs to improve their standing and to better their programs, a few suggestions have been brought together which reflect the thinking of Game Commission personnel and active sportsman's clubs leaders. They are worthy of consideration.

General Suggestions

Sportsman's clubs which do not undertake active and intelligent programs die of stagnation. Unless a club has real objectives and a long-range active and constructive program, it will never amount to anything.

The Commission realizes that the wildlife movement in Virginia can be greatly furthered by the active participation of clubs in the state-wide, long-range wildlife restoration program. Conscious of this fact, it is imperative then that more individual members of organizations have definite work to do. It has been the experience of all sportsman's groups that active participation of *all* individuals in a club tends to strengthen the organization and promote a general feeling of accomplishment.

The Commission is anxious to make all its personnel and facilities available to clubs. The services of four divisions of the Commission are available to each organization if they will only ask for it.

The Game Division has 12 district game technicians stationed throughout the state and these well-trained biologists are in a position to give clubs sound and practical advice on worthwhile projects. The Law Enforcement Division has six supervising game wardens and over 135 county game wardens and conservation officers who are ready and willing to give advice and to lend a helping hand whenever called upon.

The Fish Division, with its technical staff of fisheries biologists, is also in a position to render valuable service. These men should be called upon for advice on public pond construction, fish management, and fish problems in general.

The Education Division has a staff of special service officers who travel the state giving talks and illustrated lectures and who show motion pictures and give programs before adult organizations and youth groups. Their services are free for the asking by writing to the Commission at Richmond.

Some Worthwhile Projects

The following fifteen projects for sportsman's clubs have been singled out as worthwhile. All of them have

been tried in some degree and each has proven itself a creditable project.

1. ***Habitat Improvement Project.*** All wildlife seeks desirable living conditions. A good club project is to sponsor a food and cover planting contest in the community or county. This could be done through the local 4-H or F.F.A. groups, or, the club members themselves can go out and actually do the planting. Besides planting food patches, the club can promote a program of habitat improvement by encouraging landowners to leave small areas of grain for wildlife, the encouragement of brush piles, overgrown fence rows, ungrazed woodlands, and the planting of annuals, perennials, shrubs, vines, and trees.
2. ***Support the Annual State-wide Wildlife Essay Contest.*** Offer additional school prizes and call upon school officials and teachers to take an active part in the popular and ever-growing contest. Details are available from the Commission at Richmond.
3. ***Construct or Promote Community Fish Ponds.*** Clubs who wish to see more and better fishing in their community are urged to get behind a movement to provide additional public water in their sections. The encouragement of farm fish pond construction is also desirable. Projects of this type help keep the underground water table level higher and furnish sport fishing for members and friends.
4. ***Information Programs.*** One of the best things a conservation club can do is to keep its membership informed on the status of natural resources generally. Familiarize the membership with what each of the following agencies is doing by inviting a speaker to the meeting: Soil Conservation Service, State Water Control Board, Virginia Forest Service, U. S. Forest Service, Department of Conservation and Development, Commission of Game and Inland Fisheries, Commission of Fisheries, Virginia Extension Service, Virginia Cooperative Wildlife Research Unit at V. P. I., and U. S. Fish and Wildlife Service.

Building a club house gives members a sense of ownership and helps regain lagging interest.

U. S. Forest Service photo

Stream improvement on regular trout streams can increase the carrying capacity of fish.

5. ***Birdhouse Building, Wood Duck and Squirrel Box Construction Projects.*** The building of birdhouses is a fine project for any youth group, and this should be encouraged by sportsman's clubs because it develops interest in birds and conservation. The construction of wood duck nesting boxes and squirrel boxes is a good project for adult groups and serves to get everybody participating in a project.
6. ***Stream or Lake or Pond Improvement Project.*** Local fishing waters can always stand improvement. In good trout country, deflectors and check dams and hiding places need to be provided. In warmer waters, much can be done to improve fish habitat and improve the fishing in a stream. Projects that provide access areas to lakes, ponds, and rivers are also worthy undertakings.
7. ***Scholarships and Camperships.*** Clubs who can provide scholarships in conservation or camperships to a local camp for young people will find that this is a very honorable and worthwhile undertaking.
8. ***Build Club House, Park, or Outdoor Study Area.*** Sportsman's clubs who find interest lagging in their organization might well look into the possibility of building their own club house. This gets everybody working and allows for a sense of ownership. Along with the club house, it may be desirable to buy some land and set up a park and an outdoor nature study area. When the community is taken in on such a project, publicity to the organization and interest begin to soar.
9. ***Promote Better Farmer-Sportsman Relations.*** This can be done by sponsoring farmer-sportsman so-

(Continued on page 20)

Exploring the "Falls" of the James

By O. K. GOODWIN

(Photos by Marcus Ritger)

THE historic "Falls" section of the James River just above Richmond has long presented challenges to would-be explorers. It presented a challenge to Captain John Smith in 1607 when, exploring the tidal James he found the falls country impassable to small craft. It was because of the sudden abruptness of the navigable James that the site of the City of Richmond was chosen.

Three hundred and forty-seven years later the James still presents obstacles. While the scene has drastically changed and civilization has left an indelible imprint, the modern explorer still finds the "Falls" section replete with challenges and adventure.

So it was with us, two venturesome canoeists, determined to see the falls country in the modern day: determined, too, to explore this section of the James when the water is reduced to a mere trickle and only huge forms of dry boulders and bedrock greet the passerby.

The trip ahead of us had never been called impossible, but we were dissuaded at every turn. From Williams Island to Mayo Island, a distance of about four miles, the rocks of the river seemed impassable. The by-passing canals that feed the power wheels of mills along the way and the low level bridges and water gates presented serious obstacles, and there was considerable argument against even trying the adventure.

It took considerable time just to reach the river. We wanted to launch our canoe below Bosher's Dam beyond the western city limits, but found it difficult to get from the highways to the river. One thing is certain: I'll never again believe any sign which reads "River Road." We followed a road bearing just that title for several miles and though we knew we were within one-half mile of the river, every approach to it was blocked by a dead-end, circle, private property or roadblock labelled "No Trespassing." When we finally reached a starting point, (about one mile below Bosher's on the south side of the river) we had lost over an hour.

Getting under way was simple. We carried the canoe to the water, loaded our light equipment (lunch, binoculars and camera) and shoved off. But . . . right away we knew that the trip was going to be anything but easy. Moss-covered rocks hid treacherously just under the shadowy surface of the water. Although there was only a slight current, we brushed the rocks several times before we became accustomed to travelling the slow pace which was required.

A stone's throw from the north bank of the river and running parallel to it was the Kanawha Canal. We had heard a good deal about this waterway and stopped several times to walk across the ground separating us from it. We found that the canal was very much the same as described from Pre-Civil War days. The banks, width and depth apparently were being maintained and the canal employed to direct water to the industries downriver. There were no boats of any kind on the canal.

We had easy going for a short stretch just before we reached the North Dam at Williams Island. Here we found that the fishing in this upper part of the river was fine as attested by the sizeable catches being made by a number of rod and reel men standing on the dam and the rocks below. The James in this section is said to provide some of the best smallmouth fishing found anywhere in the east.

A strenuous effort is necessary to make a quick turn against the rapid flow of water in the canal. Here, Adams, with a sweep stroke and Goodwin, with a reverse sweep work to swing their craft clear of an obstruction downstream.

The section of the James at Williams Dam provides good fishing. The James is noted for its fighting smallmouth bass.

The first low-level bridge under which the canoe passed allowed a scant inch and one-half clearance. This was the bridge at the Waterworks Filtering Plant.

A water conduit at the Filtering Plant called for some close manipulation, but by "bobbing" the ends of the canoe under and then lying flat, the voyagers were able to pass under.

We encountered an old-timer who was seining the fringes of the dam and rocks for minnows, and after talking with him for a moment, found that he knew his river. He pointed out landmarks and suggested our course through the next obstacles. Accordingly, we made our first portage from the river into a raceway which feeds the settling basins of the Richmond Water Works. The second and third portages carried us from the raceway around a water-gate and into one of the settling basins, and from the settling basin into the old canal.

In the canal the water was moving at about a five-mile clip and carried us headlong to our first low-level bridge (at the Water Works Filtering Plant). We made a hasty estimate, judged that by lying flat in the canoe, we could pass under, and zipped through with 1½ inches to spare. This was the first of four such bridges which we were able to clear.

A short way down the canal, we reached the waterworks pumping station. At first glance, and upon closer inspection there seemed to be no way of passing. The canal at this point dropped about twenty-five feet through turbine blades of the station. The whole area was enclosed by high fencing and the buildings of the plant. It looked as though we had reached the end of our journey. Over the sound of the pumps, we could discern the faint voice of a radio, so, acting on the theory that where there is a radio, there are listeners and where there are people in a plant like this, there may be a solution to our dilemma, I followed my ears. The two plant workers were startled by my sudden appearance. One looked at the other and I could see him say "Where'n'ell did he come from?" The whirring of the pumps kept his voice from me, but I knew I was trespassing, so I hastened to explain. Once they understood how we happened to be inside their fences, the workmen tried to solve our problem for us. We surveyed the situation together, and when all the possibilities had been examined, Adams and I went back to the canoe to prepare for our portage. A gate was unlocked, the pumphouse doors opened, and *we carried our craft right through the middle of the pumping station house*!! We carried to the lower level of the canal and dropped the canoe into the water we hadn't been sure that we would see. Then, after letting them know how much their friendliness was appreciated, and discussing obstacles ahead, we resumed our trip.

From the occasional glimpses we could get of the river, we saw that the farther downstream we went, the drier it appeared.

Still in the canal, we passed by Byrd Park, the grounds of Maymont and around the hewn face of the granite hill bearing Mt. Calvary, Riverview and Hollywood Cemeteries. The drill marks in the granite where the canal right-of-way had been developed were plainly evident. We were searching for a way back into the river as we passed under the Robert E. Lee bridge and U. S. Highway 301. The canal, which is about 60 to 80 feet above the river here, begins to turn into the city and away from the river course. After some little searching we found that the Chesapeake and Ohio Railroad had thoughtfully provided two flights of access stairs in their yards which answered our needs. After portaging down the stairways and a steep hill below, we reached the river, at a point almost under the bridge.

Here we met the most disagreeable obstacle of the whole trip. The river bore a thick scum of paper pulp waste material into which we launched our canoe.

We canoed to the intake gates on the North side of the river where water is sucked into another canal for power, and found that there was no way that we could enter. Crossing the river above a wide dam, we searched for another route. The south side proved another dead end, so we returned to the middle of the river where the dam is based on an outcropping of the bedrock providing a possible portage route. Picking the best site, we carried across the dam, the river-carved rock and reentered the water below.

Portages, with the canoe over their heads, was the rule rather than the exception on the "cruise". Here, we carry our craft to get around the Byrd Park Pumping Station.

Canoeists in the canal just before it turns into the city. The dam to right is at Belle Isle and the arched bridge is the Robert E. Lee Bridge.

Proceeding with caution when we cast off, we "felt" our way through the shallow water below the dam and crossed to the south side of the river. Here, again, we found a dam shunting water into another canal for paper mills and a hydro-electric plant. A short portage and a short paddle and we found ourselves faced by three low-level bridges under which we could not pass. A survey of the remaining canal showed us that by making two additional portages and paddling another short distance, we could reach tidal water below Mayo's Island. We were satisfied that it could be done and decided to terminate our venture where we were.

Our trip ended at 6:00 p.m. It had taken seven hours for us to navigate six miles of river and canals, and seven portages around the various obstacles to water travel. To anyone interested in boating for pleasure alone, our trip would seem rather foolhardy, but to one who knows just how difficult "getting through" can be, seven portages (plus two additional ones needed to complete the trip) are not excessive or unexpected for a party which has somewhere to go.

The James River at the "Falls line" descends rapidly. There is a drop of about 15 feet per mile through Richmond. It is natural that the power should be used by industry; indeed, the water is used again and again before it passes along this distance. But, it seems ironic that the "Mighty James" is reduced to a rockpile and pools of standing filth by the very industry which thrives on the power provided by its water. However, overlooking the nuances of our mechanized civilization, we had accomplished our end. The trip had been an exploring adventure for us. Now we had first hand information as to the condition of water travel here, and a good knowledge of the many obstacles, the superb fishing, and the historical and natural attractions. We felt well-informed. At least, there was no longer any doubt as to the feasibility of passing through Richmond by canoe. It can be done. We know!

SUGGESTIONS (Continued from page 17)

cials and supplying farmers with field peas, soybeans, chufas, etc., under agreement with them to harvest half and to leave the other half nearest to brush or woodland for turkeys, quail, rabbits, or furnish suitable seed and plants to establish feeding areas in woods and pay farmers for planting.

10. ***Establish Conservation-Information Centers.*** Establish in the local high school library, Farm Bureau, F.F.A., 4-H club, or community hall "conservation-information corners" containing wildlife publications, conservation material, exhibits, etc.
11. ***Virginia Wildlife Magazine and Literature.*** Send subscriptions to the magazine to farmers on whose land club members wish to hunt and fish. Provide local class rooms with extra copies. Purchase and add to the local school libraries good pamphlets and books on conservation and wildlife.
12. ***Set Up Legislative Committee.*** Clubs should keep up with all legislation affecting conservation, local, state, national, and go on record for or against passage of such laws according to whether they are sound from a conservation standpoint. What's best for the public interest should be the guiding factor; also, give the resource first consideration, people's wishes second.
13. ***Assist in Promoting Conservation and Wildlife Weeks.*** Each year a Wildlife Week is proclaimed by the Governor; same for Conservation Week. Sportsman's clubs can do much to stimulate conservation interest in their communities by local programs, by publicity, exhibits, and radio and TV programs stressing conservation.
14. ***Install Trap and Skeet Fields and Promote Gun Safety.*** While trap and skeet are wonderful sports in themselves and promote competition and good

(Continued on page 24)

Propagation of

Nut Trees for Man and Wildlife

By H. F. STOKE

(Photos by author and U.S.D.A.)

New varieties of nut trees hold much promise for man and wildlife.

THE first breath of autumn stirs nostalgic memories and primitive yearnings foreign to life's routine. In our time the lure of the woodlands is largely sentimental; to our pioneer forebears it was intensely practical. The nut harvest was one of the major crops and contributed largely to the winter food supply.

Nuts remain one of the most nutritious and palatable foods for man and wildlife but the available supply has been sadly depleted.

Early in the present century the oriental chestnut blight destroyed our vast chestnut forests in a single generation.

Today, too, one scarcely ever sees a mature specimen of the majestic black walnut, thanks to man's destructiveness and his penchant for manslaughter. The writer, an oldtimer, chopped many a walnut fence rail into firewood back in the days when "worm" fences were being supplanted by barbed wire. During World War II the Ozark country was virtually stripped of all black walnut trees large enough to make a gunstock. Were it not for the activities of the ubiquitous squirrel the species would be well on its way to extinction.

The rugged hickory once furnished the material for the running gears of practically all vehicles. Now the supply is so limited that it does not supply the demand for tool handles.

Clearing of land has practically eliminated the hazel.

Man's interference wrecks the economy of nature; only by his cooperation can the balance be restored. Originally nature supplied both the basic laws and the necessary conditions for the life of any species. Man destroys conditions but the laws still hold. He must restore congenial conditions if nut trees are to flourish once more.

Nut trees are forest growth which connotes cool, humus-filled soil. Planting nut trees on old wornout fields is a waste of time. Scientific tests have proven that around 70 degrees F. is the optimum soil temperature for maximum growth; that growth at 90 degrees is as poor as 45 degrees.

On June 27 of this year, the atmospheric temperature in the shade stood at 95 degrees at 3 p.m. The soil temperature six inches beneath my close-clipped lawn registered the same, while twenty feet distant, in the deep shade of a large filbert, the temperature at the same depth stood at 70. A young walnut tree will grow much faster in a briar-choked fence row than in an open field of the same fertility.

Forest conditions can be simulated on a city lot. Good soil with a heavy leaf mulch will produce good results until the young tree can shade its own root area. It takes about a five-inch depth of mulch to lower soil temperature as much as shade, alone.

The foregoing applies to all nut trees of the temperate zone. There are certain other characteristics of the various species that require separate discussion.

The Chestnut

Under the title, *The Chinese Chestnut for Wildlife and Farm Wood Lots,* an article by Dr. Jesse D. Diller appeared in VIRGINIA WILDLIFE in November, 1952. This excellent article drew a picture of the chestnut situation, and pointed out the superior qualities of the Chinese chestnut, both for nut production and breeding purposes, for the production of blight-resistant timber-type trees.

The Chinese chestnut, *Castanea mollissima,* does not grow so large as the native species, but has a wonderful root system, is resistant to drought and should be planted on good but well-drained land.

The nut is intermediate in size between the European and the American chestnut, and is as sweet as the latter. In the better selections, which have become named varieties, the bitter pellicle or skin that clings so tightly to the kernel of the American nut, peels off freely. Americans, who are the only people that eat chestnuts raw, find the Chinese chestnut well suited to their taste.

The named varieties that are now being propagated by a few nurseries by grafting are the best to plant for

Dr. McKay of the U.S.D.A. experimental nursery at Beltsville, Maryland, examines a young Chinese chestnut.

The Chinese chestnut has a wonderful root system, is resistant to drought and should be planted on good but well-drained land.

Nuts, burrs, and leaves of the new Chinese varieties are much like the once popular American chestnut except that the nuts are larger.

home use. The nuts are superior and they can be expected to bear at an early age.

Plantings for timber purposes may be made with seedling trees set ten feet apart, to insure straight, upright growth. When planted in orchards for nut production mature trees should have a spacing of not less than forty feet. When thus planted the trees take the approximate shape of the apple tree, but become much larger. Grafted trees should begin to bear in four or five years on the average. Seedling trees are usually slower.

In addition to man, chestnuts are eaten by squirrels, wild turkeys, deer, bear, groundhog, mice, jays and sundry other creatures, so it probably is best for the amateur propagator to grow his seedlings in his garden; planting very shallow as soon the nuts are ripe and covering with a little leaf mulch. Alternate freezing and thawing will cause no injury. If rodents are a threat the nuts may be given shallow stratification between two pieces of wire cloth, then taken up and planted in early March.

Although chestnuts will remain sound all winter if lying on the ground under nothing but a light cover of leaves, they are very perishable if not handled properly after gathering. If at once stored in bulk they will heat, mold and rot. Spread out and dried like other nuts they will die, dry hard and become worthless in a few weeks.

A good practice is to spread the nuts on trays as soon as gathered and place in a shaded, airy place for not more than a week, for "curing." At this stage Europeans smoke the nuts to kill mold spores.

For home storage nothing can be better than packing the "cured" nuts in slip-cover tin cans such as are used for packing vegetable shortenings. A hole the size of a ten-penny nail should be punched in the top of the can. This slight ventilation prevents the accumulation of gas and spoiling of the nuts. Sound chestnuts, thus stored, will keep for many months in the domestic refrigerator, and will germinate promptly if planted in the spring.

The chestnut blight which appeared in Italy just before World War II appears well on its way towards wiping out the chestnut industry of southern Europe. Prospective commercial growers, therefore, appear assured of a good market for a long time.

The Walnuts

The Eastern black walnut, *Juglans nigra*, easily ranks first of the species for Virginia planting. Being native it is frequently found growing along fence rows and draws, without encroaching on arable land. It is our most valuable timber tree, and no nut is superior for culinary use or in ice cream.

In planting the nuts nature enlists the aid of the squirrel. Nuts lying on the top of the ground during the winter almost invariably spoil. The squirrel's planting method cannot be improved upon. He selects sound nuts and plants shallow during the fall and early winter, finishing off with loose leaves. Within two years the young tree is ready for transplanting or budding or grafting. Both the black walnut and the hickories have a long, heavy tap root, as much as possible of which should be saved in digging for transplanting.

Several selections of superior trees are being propagated as named varieties, among which the *Thomas* and *Ohio* are popular.

There are hardy varieties of the *Persian* or *"English"* walnut that are doing well in Virginia, and are recommended for home grounds. These are grafted on black walnut stocks, as the seedlings are as variable as other seedling fruits, and are much slower to come into bearing. On black walnut they produce as soon as apples.

The butternut, or white walnut, is native to the moun-

A simple splice graft is made with two chestnut twigs.

A bark slot graft is best adapted to top-working hickory or other thick-barked species.

tain regions of the state but does not do well at lower altitudes.

The Japanese walnut, *J. sieboldi,* which is quite similar to the butternut in type of bark and foliage, is better adapted to statewide planting. It grows very rapidly and produces its nuts in clusters. The most desirable of the species is the heartnut, which has a heart-shaped nut which cracks well and delivers the kernel whole. The kernel has a mild butternut flavor. It is best grafted on the black walnut.

All walnuts do best on deep, well-drained soil.

The Hickories

Of the hickories the pecan is being most planted. It does best on sub-irrigated bottom lands, where it becomes one of our largest hardwoods.

Most southern varieties fail to ripen their nuts in Virginia, due to the comparative shortness of the summer season. There are a number of propagated varieties that originated along the Ohio and Mississippi that should mature their nuts here if planted on good, deep soil with abundant moisture. These are available from a few nurserymen.

Aside from the pecan, the shagbark, *Carya ovata,* is deservedly the most popular of the species. It is native to the mountain sections of the state, but appears to thrive in the eastern districts. Some variety selections have nuts as thin-shelled as pecans, and the flavor of the kernels is unsurpassed.

Seedling hickories are of slow growth but production can be hastened by top-working on such native species as the mockernut or white hickory.

Seeding, culture and soil requirements are virtually the same for the hickories as for the black walnut.

The Hazels

The American hazel is native to a number of counties of the state, and the larger European hazel or filbert seems equally at home. Perhaps better than either is a hybrid resulting from crossing the two. It is intermediate in size of nut and plant between the two, and is more resistant to the Eastern filbert blight which attacks the European species near woodland areas.

The native hazel does best as a forest fringe or undergrowth; all-day exposure to the hot summer sun sometimes induces leaf burn. Planting and soil requirements are the same as for the walnut and hickory.

Those interested in finding a source of supply for nut trees and seed may get the required information by writing to Spencer B. Chase, Secretary, Northern Nut Growers Association, 2338 Parkview Ave., Knoxville, Tennessee.

Those wishing to try a forestry planting of Chinese chestnuts or other nut trees are urged to write to U. S. Forest Service, Washington 25, D. C., for Forest Pathology Release No. 15. There is no charge.

A leaflet, *Grafting Methods Adapted to Nut Trees,* is available by writing the office of the Virginia Commission of Game and Inland Fisheries.

American Resources

"A well-organized, purposeful, and literate people will learn to live within its limitations, always leaving a surplus for addition to capital and for use in emergencies. Other peoples are at the mercy of the very environment they abuse. Their conservation practices, grown out of long histories of human misery, never provide enough to meet mounting demands. As we should expect, these two groups of nations differ markedly in their means of education, for it is only through education that belief in a common purpose, such as conservation, can be instilled."

—J. RUSSELL WHITAKER
EDWARD ADKERMAN

SUGGESTIONS (Continued from page 20)

marksmanship, such activities can also promote training in gun safety. Gun safety should be particularly aimed at the youth in the community, although all hunters can stand regular cautioning in firearms use.

15. ***Sponsor Trophy Contest.*** Enter the statewide deer and bear trophy contest and help secure technical information on game population and kills.

The above are only a few worthy projects. Many more can be named. The important thing is to get started on something which has been proven worthwhile and then staying with it until it is accomplished. Also, two or three good projects, well promoted, are better than a half dozen on paper. Different projects fit in different communities and each club will have to determine which type of project best fits in its community.

Club Officers

A word or two of advice might be said about officers, the elected officials who are chosen to run a club. Officers should be carefully chosen and should not be changed so frequently as to destroy continuity in a program. Where a club seems to be bogging down, it might be well to look over the leadership. A change may be in order. The officers, who are the leaders, are the backbone of any organization. Choose them wisely. And don't forget "key" individuals. Keep them functioning. It is your key men that keep a club from dying.

Committees

No organization should attempt to exist without the strong support of working committees. Committees are the main arm of a club. They are the functioning groups within the organization. When good committees are appointed, good results can be expected. If helter-skelter chosen, little progress will result.

Each organization should have at least several working committees. The most important committee is the program committee, for upon this committee rests the success or failure of club meetings. Only the most resourceful of persons should be made chairman of the program committee. When programs are good, interest is high. When they are poorly planned, attendance drops off or the club breaks up. Several other committees might well be considered, depending on the nature of the club, e.g. finance committee, conservation project committee, legislative committee, wildlife essay contest committee.

Finances

A final word should be said about finances. Though some organizations can exist without dues, this is not recommended. If an organization is worth belonging to, it is worthwhile having dues. Dues should not be too high, nor too low. If too high, they will keep out many who may not be financially able to join. If too low, many individuals might join who lack interest and never come to meetings.

There is one absolute truism in club work. If a club wants to do anything really constructive, it will sooner or later take money. Wise is the club who builds up its financial resources so it can really do something constructive. It is better to try to build up the treasury through special fund raising campaigns rather than rely upon dues. Dues should largely be used to take care of the operational expenses of a club.

Organization

No attempt has been made here to give details on how best to organize and set up a club. This information is available in pamphlet form entitled "How to Form a Sportsman's Club" and is available from the Commission of Game and Inland Fisheries, Richmond, Virginia, or *Outdoor Life*, 353 4th Ave., New York 10, New York.

BUSHYTAILS (Continued from page 12)

what good is knowledge if it's not used—sort of like the 'teenager who knows it's wrong to snitch watermelons, but who snitches 'em anyway. Or the hunter who knows he shouldn't shoot a den-tree squirrel, but who just can't pass up the shot. Or the hunter who knows that shooting into leaf-nests leaves a lot of dead (or wounded) squirrels, but who says, "Well, maybe he'll jump out this time." And there's still some cutting of den trees, just for one limping gray. The gray is six ounces of meat; the den tree, 10, 20, or 50 years of gray production.

I guess it's more or less up to us hunters. They are *our* squirrels. We've got to *think beyond the law,* for no game regulation *makes* you draw a dead-certain bead, or leave the best squirrel factories in the woods.

I used to tote game for old Uncle Q. The ancient Negro blacksmith never heard of conservation. Neither had I; nor did I, until about 20 years later. But, for an old-timer, Uncle Q hunted *conservation-ly*. Not that he passed up den trees or lead squirrels in mating chases. With him I've frozen solid, I thought, at the foot of huge, hollow oaks and gums. But with him, also, I grasped, dimly and indefinably, basic principles of good behavior in the squirrel woods. He never shot until he was sure; he never killed more than he could use; he never, or very seldom, hunted squirrels in the spring or early summer.

"Neber forgit de seed, Mr. Lee," he told me.

"But there are lots of squirrels, Uncle Q."

"Dey is, sho'nuf'. But dey is lots mo' people. An' squirrels an' people is going' differ'nt d'rections."

[1]Leader, Colorado Cooperative Wildlife Research Unit, Colorado A and M College, Fort Collins, Colorado. The Colorado A and M College, Colorado Game and Fish Department, Wildlife Management Institute, and U. S. Fish and Wildlife Service, cooperating.

Extraordinary Proposal to Save Whitewing Doves

The Texas Game and Fish Commission has sanctioned an extraordinary proposal which might save the threatened whitewing dove population from further losses. The plan, which has been referred to the United States Fish and Wildlife Service for final approval, would permit a regulated hunt of predaceous boat-tailed grackles just before the peak of the whitewing nesting season.

Forest-Game Agreement Streamlined

The Virginia Game Commission and the United States Forest Service agreed recently to improve and streamline the existing agreement between them enabling both agencies to make wildlife improvements in the 1,500,000 acres of national forest land in Virginia.

The monies from the one dollar "forest stamp" which covers hunting and fishing, goes only for wildlife improvements on Virginia's national forests. Project work is done through the stamp money with supervision by the Game Commission, and the U. S. Forest Service cooperating.

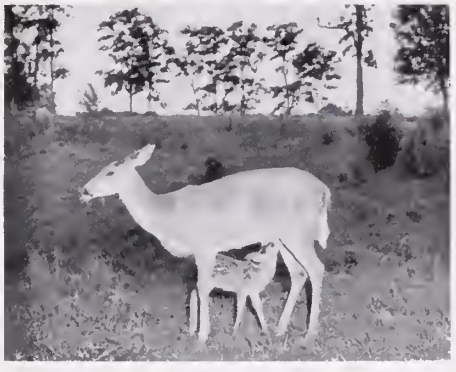
I. T. Quinn (left) and Charles L. Tebbe sign the cooperative wildlife agreement.

Executive Director I. T. Quinn of the Commission of Game and Inland Fisheries and Regional Forester Charles L. Tebbe of the U. S. Forest Service signed a cooperative wildlife agreement on July 6 covering future development of the George Washington and the Jefferson National Forests for public hunting and fishing.

Lunch at New River

Major Harold Rood, executive officer at the Radford Arsenal, sent along this unusual picture of a fawn getting its lunch on the grounds of the New River Ordnance Plant. Plant photographer W. A. Shaw, Jr., took the picture.

The Game Commission restocked the grounds of the Arsenal some years ago and the deer, though wild enough, occasionally afford some interesting photographic material.



This young fellow is too busy with lunch to be camera shy.

Nansemond IWLA Gets Charter

The new Nansemond Chapter of the Izaak Walton League of America, organized in the spring, received its final charter from national headquarters on July 20. The presentation was made by Art Thompson of Norfolk, member of the national executive board.

Shelton Rountree, Nansemond County game warden, was also presented a founders' pin in behalf of his efforts to get the chapter under way. Jack Stowell, IWLA eastern representative, made the presentation.

The chapter now has over 60 members and expects to do big things.

Art Thompson, of Norfolk, presents charter to the Nansemond chapter in Suffolk.

Michael Hudoba Receives Conservation Award

The National Association of Conservation Education and Publicity has selected Michael Hudoba of Manassas, Virginia, for its national award for conservation writing.

The significant award, a beautifully engraved black and gold certificate of honor, was presented to Mr. Hudoba in Washington, D. C., recently by J. J. Shomon of the Virginia Game Commission, representing NACEP as former board member and member of the awards committee.

Michael Hudoba (left) receives national award for conservation writing from J. J. Shomon.

The certificate honoring Mr. Hudoba reads: "For outstanding contribution to the cause of conservation as an outdoor writer and Washington correspondent for *Sports Afield* magazine."

Michael Hudoba, besides being active as a conservation correspondent and secretary of the Outdoor Writers' Association, is generally recognized among professional wildlife conservationists.

Said Miss Juanita Mahaffey, former president of NACEP, "Mr. Hudoba richly deserves this national award. He has been and continues to be a great friend of professional conservation workers everywhere and has contributed much to resource conservation generally in America."

Supervisor Johnson Retires, is Honored

W. H. Johnson, supervising game warden for the George Washington District, retired from active service on August 1, after 29 years of faithful service with the Commission.

Mr. Johnson receiving testimonial from Mr. Douglas in behalf of Alexandria chapter.

The Alexandria chapter of the Izaak Walton League honored Mr. Johnson at a testimonial meeting on July 19 and presented him with a beautiful certificate of honor. Webb Midyette, chief law enforcement officer for the Commission, was on hand and spoke of Johnson's long term of service. J. J. Shomon and L. G. Kesteloo were also on hand representing the Commission.

Commission Exhibit at State Fair

The Virginia Commission of Game and Inland Fisheries will have another educational exhibit at the Atlantic Rural Exposition beginning September 23 and ending October 2, 1954.

Information on Virginia's wildlife resources and the activities of the Commission of Game and Inland Fisheries will be the central theme for this year's exhibit.

An attempt will be made to transform a portion of the outdoors to the state exhibit area for the public to enjoy. The Commission will have 500 square feet of space this year.

W. E. Ware Succeeds Johnson

The Commission has named W. E. Ware of Tappahannock as the new supervising game warden to succeed W. Harry Johnson who retired on August 1.

Mr. Ware has been game warden of Essex County since January 15, 1938. The George Washington District which he takes over includes northeastern Virginia.

Franklin County FFA Active

The Rocky Mount Chapter of the Future Farmers of America has been working hard to increase the wildlife populations in Franklin County. Last year (1953) Agriculture Instructor E. J. Robertson and County Game Warden Gordon T. Preston devised a unique wildlife management contest for the FFA members. Besides giving the students credit for establishing food and cover patches, recognition was also credited for the following activities: leaving grain and lespedeza unharvested; building squirrel den boxes; leaving brush piles for rabbits; keeping pets confined during game breeding seasons; for activity in Keep Virginia Green crews; and for becoming familiar with the local game and fish laws.

This spring the chapter increased its activities and as a direct result over 125 Franklin County agriculture students are now participating in wildlife projects.

Rocky Mount FFA Chapter promotes wildlife conservation through club projects.

Ben L. Bird Succeeds Kesterson

J. T. Quinn, executive director for the Commission, has announced the appointment of Ben L. Bird of Bland County as the new supervising game warden for the Daniel Boone District. He succeeds M. Wheeler Kesterson of Ewing who died suddenly on July 6 at his home in Lee County.

Mr. Bird has been active as a game warden for Bland County. He first joined the Commission on September 1, 1932.

J. T. Quinn (left) appoints Ben L. Bird as supervising game warden for the Daniel Boone District.

Change in the Smokies

The National Park Service is trying a new plan in the Smoky Mountain National Park. The trout streams are small there and can't take heavy fishing pressure. As an experiment, two of the many streams in the Park are open to fishing for fun only. You can catch all you wish, with artificial bait, but you can't keep any of them. We think it's an excellent experiment. A growing number of people who fish mainly for fun will prefer this to fishing for keeps and rarely getting a strike.

Of course, we don't recommend this procedure on all streams; neither does the Park Service. We do feel that an occasional stream in our Parks might well be set aside for fishing for fun only.

Wildlife Questions and Answers

Ques.: Why is spring and fall fishing good and summer fishing generally poor?

Ans.: Spring fishing is believed to be good because natural foods are less abundant in the cooler water and, in addition, many species have finished spawning or are in the process of completing spawning and appear to need large amounts of food to counteract the activity. Summer fishing is believed to be poor because higher water temperatures speed up the general food supply and because the smaller fish spawned in spring have reached a size to provide an ample natural food supply so that the angler's lure has considerable competition. Fall fishing is believed to be good because cooler water temperatures decrease the natural food supply, making the angler's lure more attractive.

Ques.: Is there any set season on bullfrog hunting?

Ans.: There is no closed season on the frog. However, in an opinion handed down by the Attorney-General, it is classified as a wild animal, so a proper hunting license is required.

Ques.: I understand that fish are a good source of proteins. Can you give me a more specific idea just how good a source they are?

Ans.: By weight, 18 to 20 percent of the edible portion of fish is made up of complete proteins, the needed amino acids essential for growth. Fish also supply iron, calcium, phosphorus, sulphur, magnesium and other essential minerals.

Ques.: There is a pair of large birds which I have seen in our wooded garden which I thought at first glance were red-headed woodpeckers. However, they are a good deal larger, with white on the throat and a red stripe, the head black and white and red-crested. The wings have a lot of white.

Ans.: This sounds like the pileated woodpecker which has a striking appearance and is our largest woodpecker. It has an extensive range, though over much of it the species is rare or local. In early days it was regarded as a game bird and was sold in markets. It prefers heavy forests, but is not a high-climbing woodpecker. In areas where it is not persecuted, it has little fear of man, but elsewhere it is wild and wary.

Ques.: What is the incubation period of the box turtle?

Ans.: In nature the young escape from the eggs in approximately three months, but much longer incubation periods have been recorded and much shorter ones for eggs kept indoors at high room temperatures.

Ques.: What is the most efficient way to scale fish?

Ans.: Fish with small scales are scaled while those with large scales are usually fleeced. To scale a small fish, hold it firmly by the head and, with a knife almost vertical, scrape off the scales, working from tail to head. Soaking in cold water beforehand makes the task easier. To fleece a fish with large scales, grasp the fish by the tail, insert a sharp knife under the scales, tilting the edge up slightly, and work forward from the tail with smooth saw-like strokes.

Ques.: Is it true that the roots of most trees are more extensive than the branches?

Ans.: Yes, it is generally true. Most plants, except those that grow in swamps, have more parts under than above the ground.

"Old Bert keeps insisting he isn't nearsighted."

Ques.: How are fish regulations for the state formulated?

Ans.: Proposals are received at the October meeting of the Commission of Game and Inland Fisheries. They are advertised widely in the newspapers of the state and are acted upon at the next meeting of the Commission.

Ques.: Is the bow and arrow season for bucks only or for bucks and does?

Ans.: The regulations correspond to those of the respective county during the regular gunning season.

Ques.: Is there any use for the kind of seaweed found in the Sargasso Sea?

Ans.: Yes, in some parts of the world sargassum weed, a brown algae, is used commercially for fertilizer, and for the extraction of algin and other minerals. In the South Pacific, the tender shoots are sometimes used as food. Along the Atlantic coast of the United States, sargassum weed is sometimes fed to cattle.

Ques.: Is jug fishing legal in Virginia?

Ans.: It is legal provided the person fishing by this method has a line tied to the handle of the jug or fastened by some other means and held in his hand.

Ques.: Do trout continue to grow during the winter?

Ans.: Yes, since trout are cold water fishes they continue to grow during the winter months. However, the growth rate is greatly contracted during this period and this is reflected in the scale pattern.

Ques.: What makes turtles sluggish?

Ans.: Like most reptiles, turtles are sluggish because of their heart arrangement. A turtle heart has only three chambers instead of four and as a result there is considerable amount of carbon dioxide in the blood at all times.

Ques.: Is it known how bees recognize honey-yielding flowers?

Ans.: The National Wildlife Federation reports that experiments indicate that bees choose flowers first by color, secondly by scent.

Ques.: Is there any basis in fact for the legends about such creatures as winged dragons and griffons?

Ans.: Gigantic ancient lizards were probably the motives for the imaginative creation of these mythological creatures.

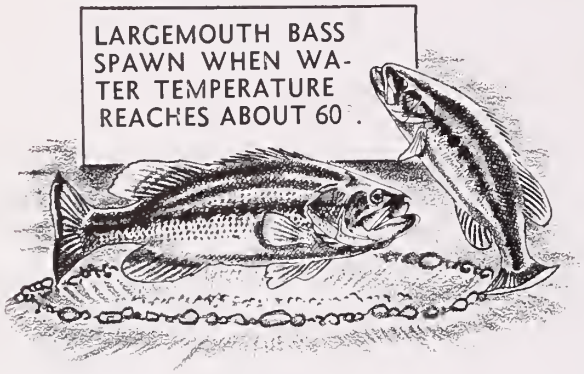
Ques.: What are trout stamps?

Ans.: There really is no such thing but people sometimes use the expression to refer to the National Forest Stamp which costs $1 and which everyone must purchase if he wishes to go hunting or fishing on the National Forest lands of the state.

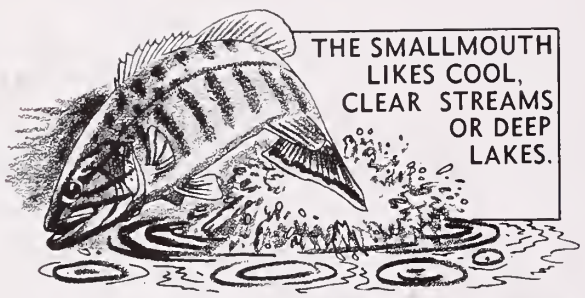
Ques.: Is Sunday fishing prohibited in Virginia?

Ans.: Sunday fishing is not prohibited statewide, but it is unlawful in the counties of Alleghany, Bath, Bland, Botetourt (except in James River and Carvins Cove), Craig, Giles (except in Mountain Lake and New River), Highland, Rockbridge, Surry (except in Sunken Meadow Lake), and in Silver Lake in Rockingham County. It is necessary to get written permission from landowners to fish on Sunday in Augusta County.

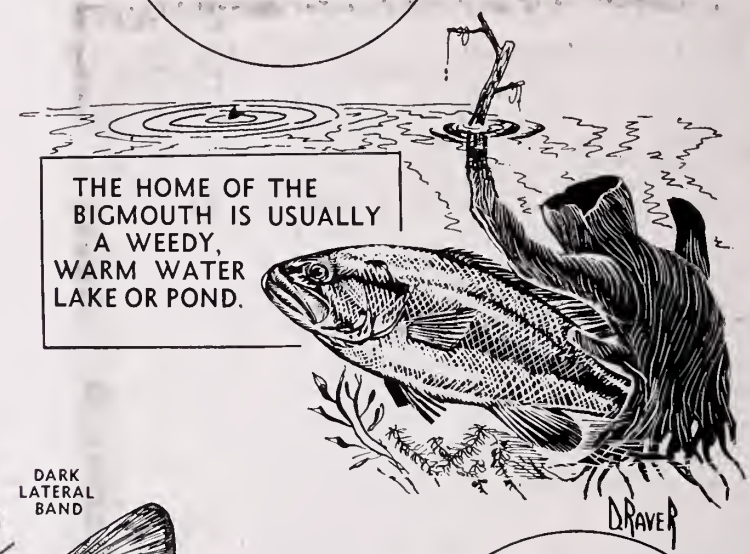
Black BASS



LARGEMOUTH BASS SPAWN WHEN WATER TEMPERATURE REACHES ABOUT 60°.

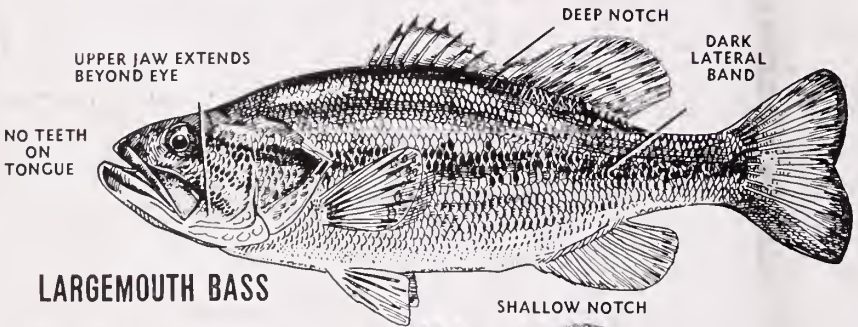


THE SMALLMOUTH LIKES COOL, CLEAR STREAMS OR DEEP LAKES.



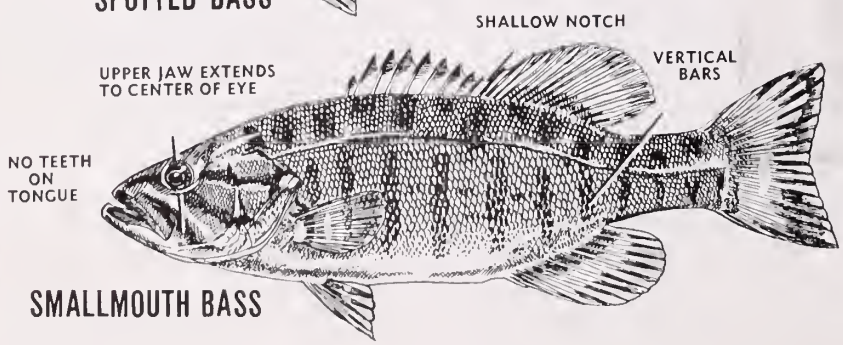
THE HOME OF THE BIGMOUTH IS USUALLY A WEEDY, WARM WATER LAKE OR POND.

D. RAVER



LARGEMOUTH BASS

SPOTTED BASS



SMALLMOUTH BASS

BLUEGILLS USUALLY GET ALONG WELL WITH LARGEMOUTH BASS IN FARM PONDS.

TAKE YOUR CHOICE...